No. 885,266.

PATENTED APR. 21, 1908.

C. A. LUNDGREN.

CASH REGISTER.

APPLICATION FILED MAR. 5, 1906.

3 SHEETS—SHEET 1.

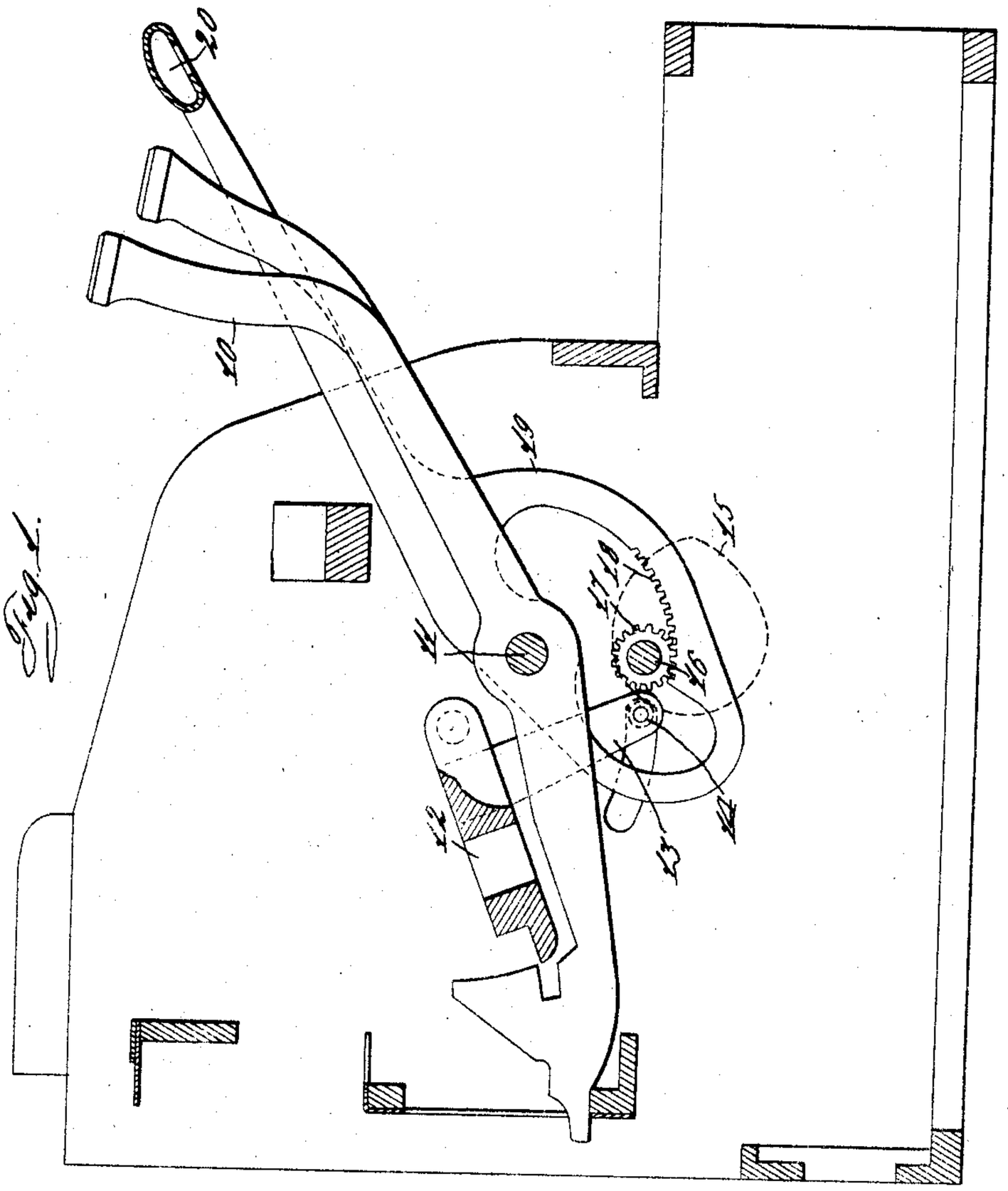

Fig. 1.

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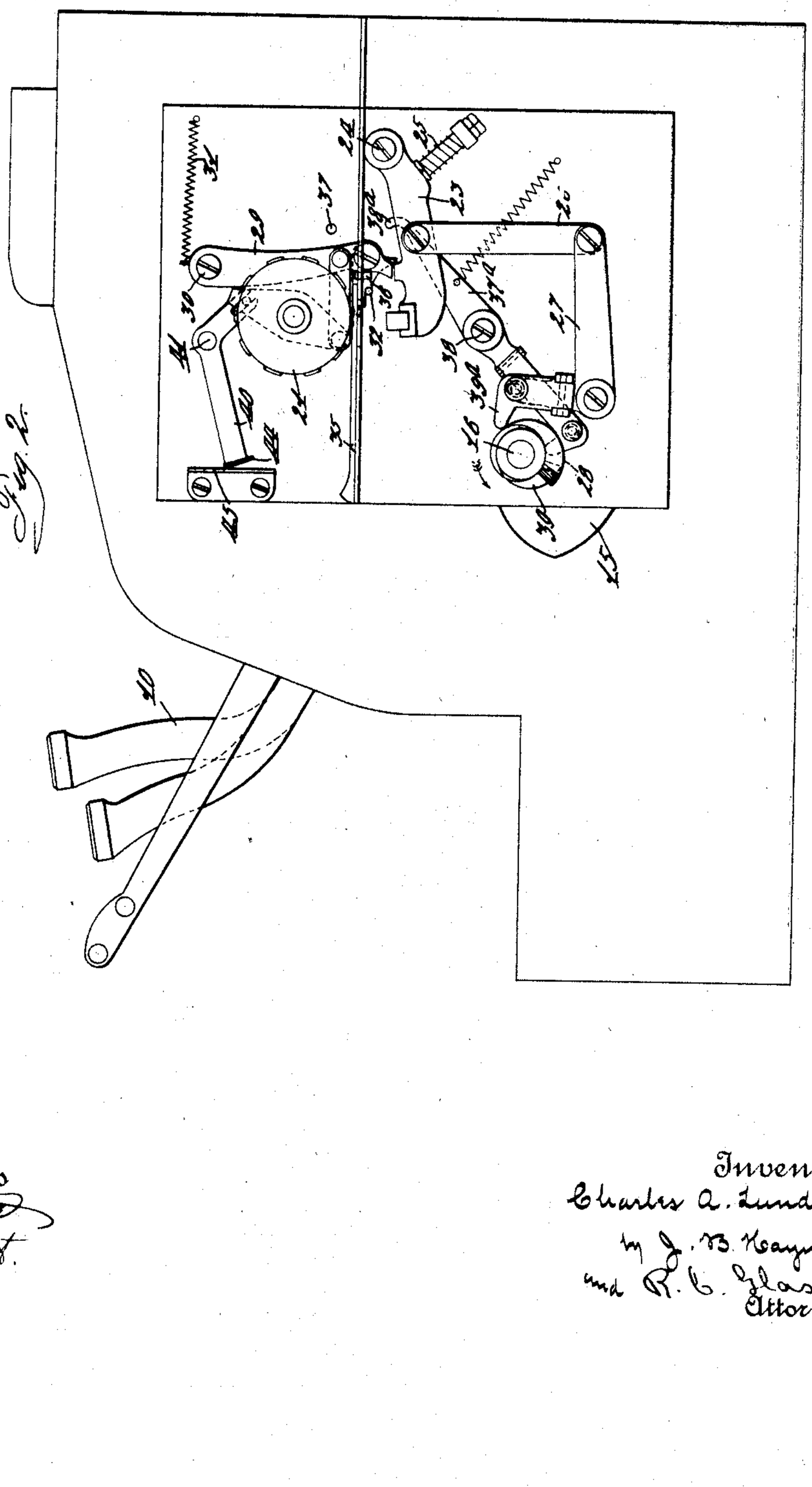
3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 3.

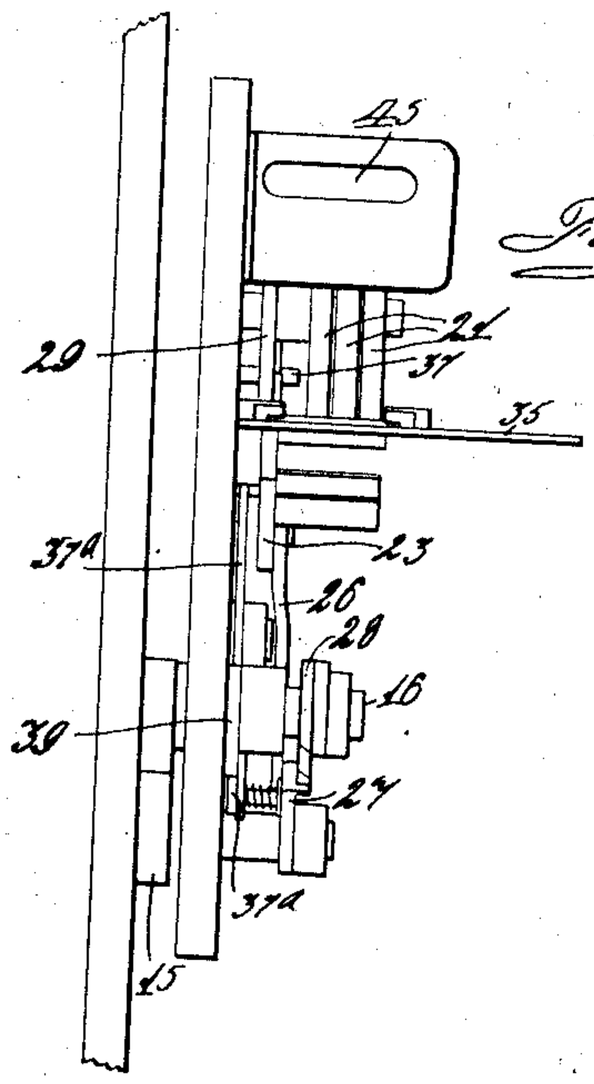


Fig. 5.

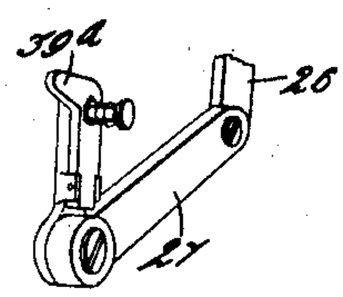


Fig. 4.

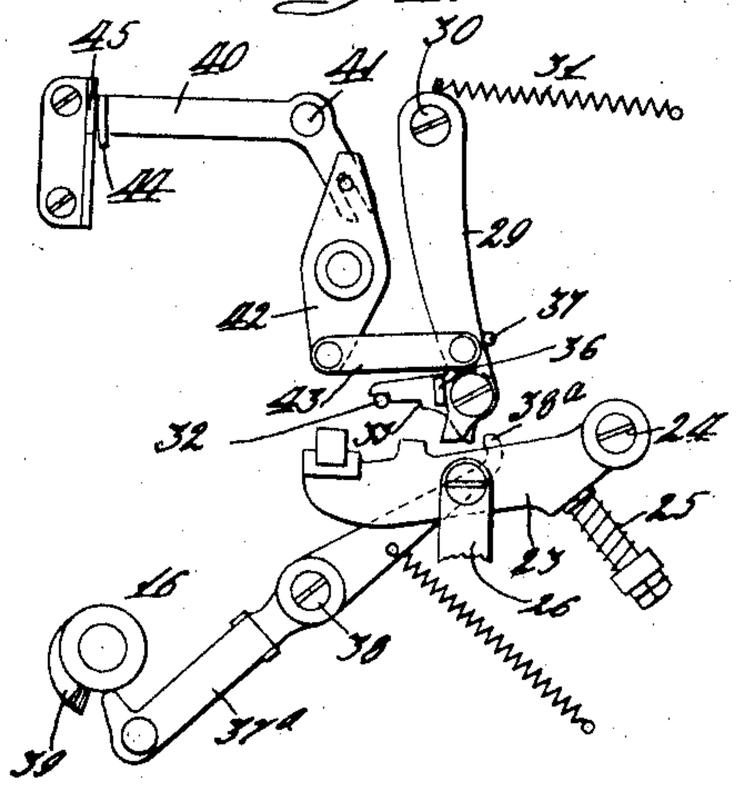


Fig. 6.

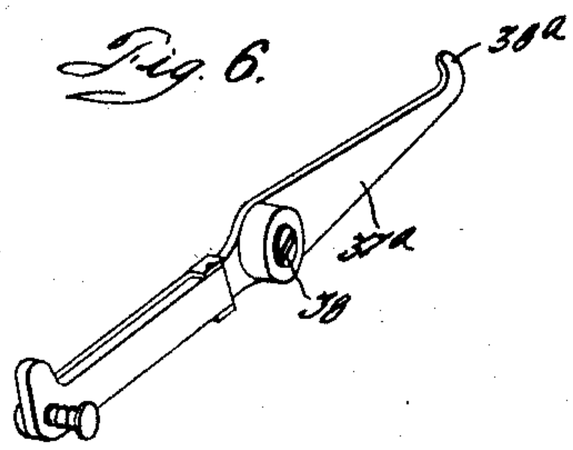
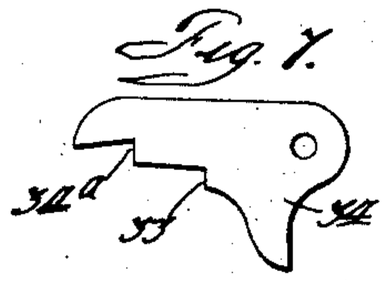


Fig. 7.



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UNITED STATES PATENT OFFICE.

CHARLES A. LUNDGREN, OF DAYTON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NATIONAL CASH REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO, INCORPORATED IN 1906.

CASH-REGISTER.

No. 885,266. Specification of Letters Patent. Patented April 21, 1908.

Application filed March 5, 1906. Serial No. 304,302.

To all whom it may concern:

Be it known that I, CHARLES A. LUNDGREN, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cash-Registers, of which I declare the following to be a full, clear, and exact description.

My invention relates to cash registers, and particularly to such registers as make a permanent record of transactions. Many machines of this type are adapted to print, when desired, on a check which is inserted in the machine. In many cases it is not desired to print a check, and my invention provides means whereby in such cases the hammering of the platen against the type-carriers is avoided. It will be evident that if the platen is caused to make its impressing stroke when no check has been inserted, that the type faces will be greatly blunted and damaged.

My invention in particular provides means for preventing the platen striking the type, the said means being adapted to be displaced on the insertion of the check into the machine. I also provide means for indicating the position of the platen-lock, whereby the operator may know definitely whether the locking device is in its operative position or not.

With these and incidental objects in view, the invention consists in certain novel features of construction and combinations of parts, the essential elements of which are set forth in appended claims and a preferred form of embodiment which is hereinafter specifically described with reference to the drawings which accompany and form part of this specification.

Of said drawings: Figure 1 is a transverse section through the machine. Fig. 2 is an elevation of the side of the machine, showing my improvements applied thereto. Fig. 3 is a detail front view showing my improvement. Fig. 4 is a detail, showing the device in operated position, and Figs. 5, 6 and 7 are details of construction, to be hereinafter referred to.

I have shown this invention as applied to a well known type of machine, but it will be understood that it may be used in connection with any other type of printing cash registers, as the improvement is not limited in scope to any particular type.

In general the machine to which I have shown my invention, as adapted, may be said to comprise, generally, a series of key-levers 10 pivoted on a transverse shaft 11, as shown in Fig. 1, and having notches at their rear ends for coöperation with a key-coupler. These keys may be actuated directly by the operator, but I have shown a common operating means for them to act through the agency of the key-coupler 12. This means comprises a lever 13, rigidly connected to the key-coupler, and having at its end an anti-friction roller 14, adapted to be engaged and moved by a cam 15, mounted on a shaft 16. This shaft 16 also carries a pinion 17, meshing with a segmental rack 18 on a lever 19, which lever is journaled on the shaft 11, carrying the keys, and which has at its extreme end a handle or cross-bar 20 for operating the same.

The keys are adapted through any desired mechanism (this not being a part of my present invention) to set printing wheels 21, shown in Fig. 2, to a position corresponding with the operated key. A platen 23 is pivoted on a pin 24, and has a spring 25, as shown, for forcing it against the type-wheels. A link 26 is connected to said platen, and to this link is pivoted a bell-crank lever 27, one arm of which is adapted to be engaged and moved by a cam 28, also mounted on shaft 16 to retract the platen. As shown in Fig. 2, the platen is normally prevented from striking the type by a bar 29 depending from a pin 30, and having a spring 31 tending to force the bar 29 forward to the position shown in this figure. Its forward motion is prevented by a pin 32, mounted on the machine frame, which normally engages a notch 33 on a pawl 34, pivoted to the bar 29. This pawl 34 is shown separately in Fig. 7, and it will be seen that it has in addition to the notch 33 a second notch 34^a, which notch 34^a is adapted to engage with pin 32 when the bar 29 is rocked rearward to the position shown in Fig. 4. This rearward rocking is caused by the insertion of a check over the table 35, the check being adapted to engage a lug 36 on the bar 29. It will be evident, therefore, that the insertion of a check and its movement toward the rear of the machine will engage lug 36, and thereby move bar 29 rearward against a stop-pin 37 on the frame of the machine. The pawl 34 will then be dropped by gravity to the position shown in Fig. 4, in which case the notch 34^a engages

pin 32 and maintains the locking-bar 29 in this position. Upon the operation of the machine the platen will now be allowed to move under the impulse of spring 25 to cause an impression to be made on the check. A lever 37ª, is pivoted on a pin 38 on the main frame, and as shown in Fig. 4 is adapted to engage and be moved by a cam 39, also on shaft 16. This lever 37ª has at its upward end a hook 38ª, which when forwardly moved will engage pawl 34 and carry the notch 34ª away from pin 32. The lock-bar 29 will then spring forward under the impulse of spring 31 to the position shown in Fig. 2, thereby again preventing the platen from striking the type.

In Fig. 2 the mechanism is shown in its normal position, and it will be seen that cam 28 has drawn platen 23 back far enough to allow locking-bar 29 to move thereover, and as shown in Fig. 2, the platen is normally slightly depressed below the locking-bar, as is evidently necessary to allow the bar to spring over the platen. When the machine is operated the cam 28 rocks the bell-crank 27, thereby further depressing the platen, until at the end of the stroke of cam 28 the high part thereof rides off of the nose 39ª of the bell-crank lever 27, and allows the impressing stroke of the platen to be made.

The cam 28 is shown in Fig. 2 as beveled on one side, and this is rendered necessary by the fact that the cam does not rotate always in one direction, but oscillates through a limited stroke, as will be evident by a comparison of its driving mechanism. The levers 27 and 37ª each have pivoted to them, as is shown in Figs. 5 and 6, a bar so mounted that it may oscillate laterally, separate from the lever, but it is compelled to move with the lever in the other direction. When cam 28 moves from the position shown in Fig. 2 to rock bell-crank 27, the high part of the cam will ride off of the part 39ª and allow the bell-crank to move in a reverse direction. When the cam is reversed the beveled part thereof moves part 39ª laterally, and thereby allows the cam to return to its normal position.

For the purpose of indicating to the operator the position of the locking-bar, I have provided an indicating device 40 (see Figs. 2 and 4). This device as shown comprises a bell-crank lever, pivoted on a pin 41, and having a pin and slot connection with a lever 42, connected by a link 43 to the locking-bar 29. The front end of bell-crank 40 carries an indicating shield 44, adapted to show through a hole 45 in the casing, as is seen in Fig. 4. This shield may bear any desired marking, and is only shown when the check has been inserted and the locking-bar 29 moved rearwardly.

The operation of this device will, it is thought, be evident from the foregoing description, and it may be briefly stated as follows: If a transaction is to be registered which does not call for the issuing of a check, the amount keys 10 are slightly depressed to attach them to the coupler 12, and the operation of the handle 20 then causes the regular operation of the machine. Cam 28 will be oscillated with shaft 16, and through bell-crank 27 and link 26 will draw platen 23 downward, and will then release it and allow it to spring back to the position shown in Fig. 2, but inasmuch as no check has been inserted the locking-bar 29 will prevent the complete stroke of platen 23, and will stop it in the position shown in Fig. 2. If, however, a check is to be used, the check is first inserted in the machine, pushing lug 36 rearwardly, and thereby carrying locking-bar 29 out of the path of the projection on the platen. When bar 29 is carried rearwardly the pawl 34 will drop to the position shown in Fig. 4, thereby retaining the locking-bar 29 in inoperative position and holding indicator shield 44 directly in the rear of the opening 45. When the operation of the machine is then made, cam 28 will depress platen 23 as before, and when the platen is released it will spring up under the influence of its spring 25 and cause an impression to be made on the check of the matter indicated on the type-wheels. At the end of the operation, cam 39 strikes lever 37 and rocks its projection 38 against the pawl 34, tripping it from pin 32, and the locking-bar will then spring forward under the influence of its spring 31, the platen meanwhile having been withdrawn by the cam 28. It will be evident that the locking device may be used without the indicator.

While the form of mechanism here shown and described is admirably adapted to fulfil the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form of embodiment herein disclosed, for it is susceptible of embodiment in various forms all coming within the scope of the claims which follow.

What is claimed is as follows;

1. In a cash register the combination with printing devices of a platen for taking impressions from said devices, and means for preventing movement of said platen, said means having a lug against which a check may strike to disable said means.

2. In a cash register, the combination with printing devices of a platen for taking impressions from said devices, movable means for preventing printing movement of said platen, and mechanism for indicating the position of said movable means.

3. In a cash register, the combination with a platen of means normally preventing movement of said platen but movable on the insertion of a check, and means for restoring the preventing means to normal position.

4. In a cash register, the combination with manipulative amount determining devices

and printing devices arranged to be set therethrough, of a platen for taking impressions from said devices, means arranged to be disabled by a check for preventing said platen from taking impressions, and a common member for operating the amount determining devices and platen.

5. In an accounting machine the combination with printing devices and means for taking impressions therefrom, of a lever for normally preventing an impression being taken, an indicating device movable with said lever, and a lug on said lever against which a check may abut.

6. In a cash register, the combination with printing devices of a platen for taking impressions therefrom, a movable means for normally preventing impressions being taken, arranged to be moved by a check, levers for operating said platen and restoring said movable means, and a main operating shaft for operating said levers.

7. In a cash register, the combination with printing devices and a platen for taking impressions therefrom, of means for operating said platen, comprising an oscillating shaft, a cam beveled on one side of said shaft, and a lever carrying a pivoted part thereon and transmitting motion from said cam to said platen.

8. In a cash register, the combination with a platen and means for operating it, of movable means normally preventing such operation comprising; a lever having a lug, a pawl mounted on said lever, a pin with which the pawl is adapted to engage in different positions, and means for tripping said pawl from said pin.

9. In a cash register, the combination with a set of printing wheels and a platen for taking impressions therefrom, of a lever normally blocking the platen, said lever adapted for movement by the article to be printed, an oscillatory shaft, and a lever operated thereby to allow restoration of the blocking means.

10. In a cash register, the combination with a printing wheel and a platen for taking impressions therefrom of means preventing operation of said platen, comprising a movable blocking bar, and a link connected to said bar, and mechanism connected to said link for indicating the position of said bar.

11. In a cash register, the combination with printing devices and a platen for taking impressions therefrom of movable means which when in one position prevent impressions being made, a spring for normally holding said means in such position and a lug on said movable means for engagement by a check to move said means to a position allowing the taking of an impression.

12. In a cash register, the combination with a printing wheel and a platen for taking impressions therefrom of a spring controlled movable bar normally in position to prevent such impressions being made, means for retaining said bar in position to allow impressions, and means for tripping said retaining means.

13. In a cash register, the combination with printing mechanism and a platen for taking impressions therefrom, of a platen locking device positioned to be engaged by the edge of a check and displaced from locking position by contact therewith.

14. In a cash register, the combination with printing mechanism and a platen for taking impressions therefrom, of a platen locking device positioned to be engaged by the edge of a check and displaced from locking position by contact therewith, and an indicator movable by said platen locking device.

15. In a cash register, the combination with printing mechanism, of a platen for taking impressions therefrom, a device for automatically locking said platen arranged to be engaged by a check and pushed out of locking position, and means automatically holding the platen out of locking position between each operation of the machine.

16. In a cash register the combination with printing devices and means for taking an impression therefrom, of means controlled in accordance with the presence or absence of an article to be marked for blocking the impression means, and independent means for holding the impression means away from blocked position between operations of the machine.

17. In a cash register the combination with printing devices and a platen therefor, of means controlled in accordance with the presence or absence of an article to be marked for blocking the platen, and independent means for holding the platen disengaged from the blocking means between successive operations of the machine.

18. In a cash register, the combination with printing devices and a platen therefor, of means controlled in accordance with the presence or absence of an article to be marked for blocking the platen, and independent means permitting the free operation of the blocking means at proper intervals.

19. In a cash register, the combination with printing devices and means for taking an impression therefrom, of blocking means for the impression means normally in operative position but displaceable in accordance with the presence or absence of an article to be marked, and means for holding the impression means from coöperation with the blocking means between operations of the machine.

20. In a cash register, the combination with printing mechanism and a platen therefor, of movable means adapted during a regular operation of the machine to prevent an

impression being taken by the platen, but capable of movement to inoperative position, and an independent means for securing the disengagement of the movable means from the platen at the proper intervals.

21. In a cash register, the combination with printing devices and means for taking an impression therefrom, of adjustable means for obstructing the operation of the platen in accordance with the presence or absence of an article to be marked, and means holding the impressing means disengaged from the obstructing means between successive operations of the machine.

22. In a cash register, the combination with printing devices and means for taking an impression therefrom, of means controlled in accordance with the presence or absence of an article to be marked for blocking the impression means, independent means for holding the impression means away from blocked position between operations of the machine, and means controlled by said blocking means for indicating the position thereof.

23. In a cash register, the combination with printing devices, and a platen, of means controlled in accordance with the presence or absence of an article to be marked for blocking the platen, independent means for holding the platen disengaged from the blocking means between successive operations of the machine, and means controlled by said blocking means for indicating the position thereof.

24. In a cash register, the combination with printing devices and a platen therefor, of means controlled in accordance with the presence or absence of an article to be marked for blocking the platen, independent means permitting the free operation of the blocking means at proper intervals, and means controlled by said blocking means for indicating the position thereof.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES A. LUNDGREN.

Witnesses:

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CARL W. BEUST.